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10/787,157	02/27/2004	Ji-sang Kim	1349.1365	4607

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EXAMINER	
MARSH, OLIVIA MARIE	

ART UNIT	PAPER NUMBER
2617	

DATE MAILED: 10/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/787,157	KIM, JI-SANG	
	Examiner	Art Unit	
	Olivia Marsh	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,6-13 and 15* is/are rejected.

7)☒ Claim(s) *2,3 and 16-23* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-23 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 6, 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang *et al* (U.S. 2003/0109243 A1) in view of Saito (U.S. 4,761,824).

As to **claim 1**, Chang discloses:

A mobile device **(portable device 100)** having an overcurrent cutoff function and at least one function module **(170, 180; paragraph 1)**, the mobile device comprising:

a main power supply **(150)** which supplies power to the mobile device **(paragraph 15)**;

a power detection unit **(130)** which detects whether power from the main power supply to the mobile device is cut off, and generates a power cutoff signal when the power is cut off **(paragraphs 15-16)**;

a backup power supply unit **(160)** which supplies a backup power to the mobile device when the power from the main power supply to the mobile device is cut off **(paragraph 15)**; and

a control unit **(140)** comprises application programs and an operating system **(It is inherent the processor possesses application programs and an OS to operate the portable device)**, and runs the application programs or controls the at least one function module, and which-communicates data lines and control signal lines with the at least one function module **(FIG 1, paragraph 15)**, and then generates a backup power supply enable signal **(enable signal 144)** to enable the backup power supply unit to supply power **(paragraph 16)**.

However, Chang fails to disclose converts potential levels of the data lines and control signal lines connected with the at least one function module to a predetermined potential level in response to the power cutoff signal. The Examiner contends this feature was old and well known in the art at the time of invention as taught by Saito.

In an analogous art, Saito teaches converts potential levels of the data lines and control signal lines connected with the at least one function module to a predetermined potential level in response to the power cutoff signal **(column 1, lines 10-12; column 2, lines 43-50, 63-67; column 3, lines 25-48)**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the mobile device having an overcurrent cutoff function and at least one function module, the mobile device comprising: a main power supply which supplies power to the mobile device; a power detection unit which detects whether power from the main power supply to the mobile device is cut off, and generates a power cutoff signal when the power is cut

off; a backup power supply unit which supplies a backup power to the mobile device when the power from the main power supply to the mobile device is cut off; and a control unit comprises application programs and an operating system, and runs the application programs or controls the at least one function module, and which-communicates data lines and control signal lines with the at least one function module, and then generates a backup power supply enable signal to enable the backup power supply unit to supply power, as disclosed by Chang, the control unit converts potential levels of the data lines and control signal lines connected with the at least one function module to a predetermined potential level in response to the power cutoff signal, as taught by Saito, to enable the mobile device to control its transceiver when an instantaneous drop in voltage.

As to **claim 6**, Chang and Saito teach everything as applied in claim 1; however, Chang fails to disclose the predetermined potential level is a logic "low" or a high-impedance state. The Examiner contends this feature was old and well known in the art at the time of invention as taught by Saito.

Saito also teaches the predetermined potential level is a logic "low" or a high-impedance state **(column 3, lines 25-48)**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the mobile device, taught by Chang and Saito, the predetermined potential level is a logic "low" or a high-impedance state, as taught by Saito, to enable the mobile device to control its transceiver when an instantaneous drop in voltage.

As to **claim 8**, Chang discloses:

> An overcurrent control method for a mobile device having at least one function module **(paragraph 1)**, the method comprising:

detecting whether a main power supply **(150)** supplying power to the mobile device is cut off **(paragraphs 15-16)**; and

supplying a backup power to the mobile device **(paragraph 15)**.

However, Chang also discloses converting potential levels of data lines and control signal lines of-connected with the function module to a predetermined potential level according to a result of the detection. The Examiner contends this feature was old and well known in the art at the time of invention as taught by Saito.

Saito also teaches converting potential levels of data lines and control signal lines of-connected with the function module to a predetermined potential level according to a result of the detection **(column 2, lines 43-50, 63-67; column 3, lines 25-48)**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require an overcurrent control method for a mobile device having at least one function module, the method comprising: detecting whether a main power supply supplying power to the mobile device is cut off; and supplying a backup power to the mobile device, as disclosed by Chang, converting potential levels of data lines and control signal lines of-connected with the function module to a predetermined potential level according to a result of the detection, as taught by Saito, to enable the mobile device to control its transceiver when an instantaneous drop in voltage.

As to **claim 9**, Chang and Saito teach everything as applied in claim 8; however, Chang fails to disclose the predetermined potential level is a logic "low" or a high-impedance state. The Examiner contends this feature was old and well known in the art at the time of invention as taught by Saito.

Saito also teaches the predetermined potential level is a logic "low" or a high-impedance state **(column 3, lines 25-48)**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the method, taught by Chang and Saito, the predetermined potential level is a logic "low" or a high-impedance state, as taught by Saito, to enable the mobile device to control its transceiver when an instantaneous drop in voltage.

4. **Claims 10-12, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang *et al* (U.S. 2003/0109243 A1) in view of Abe (U.S. 5,834,857 A).**

As to **claim 10**, Chang discloses:

A mobile device **(portable device 100)** having an overcurrent cutoff function and at least one function module **(170, 180; paragraph 1)**, the mobile device comprising:

a main power supply unit **(150)** which supplies power to the mobile device **(paragraph 15)**;

a power supply load/unload detection unit **(130)** which detects a separation of the main power supply unit from the mobile device **(paragraph 15-16)**;

a control unit **(140)** having application programs and an operating system which runs the application programs or controls **(It is inherent the processor possesses application programs and an OS to operate the portable device)** the at least one function module **(paragraphs 15-16)**;

a memory device **(SRAM 190)** which stores temporary data during the execution of the application programs and data resulting from the application program executions by the control unit **(paragraph 18)**;

a power control unit **(120)** which converts the power generated from the main power supply unit into a predetermined voltage and supplies the power to the control unit and the memory device **(paragraph 16)**; and

a backup power supply unit **(paragraph 110, 160)** which supplies a backup power to the mobile device when the power from the main power supply unit to the mobile device is detached, and which comprises a backup battery **(paragraph 15)**, and a switching unit **(130)**, wherein the backup power supply unit supplies power from the backup battery to the control unit and the memory device based on the switching unit in response to the backup power supply signal **(paragraphs 16, 18)**.

However, Chang fails to disclose the backup power supply unit comprises a DC/DC converter. The Examiner contends this feature was old and well known in the art at the time of invention as taught by Abe.

In an analogous art, Abe teaches the backup power supply unit comprises a DC/DC converter **(column 6, lines 56-67)**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require mobile device and backup power supply unit, disclosed by Chang, the backup power supply unit comprises a DC/DC converter, as taught by Abe, to enable the mobile device to handle an instantaneously shut off of the main power supply.

As to **claim 11**, Chang and Abe teach everything as applied in claim 10 and Chang also discloses the control unit communicates data lines and control signal lines with the at least one function module **(FIG 1, paragraph 15)**.

As to **claim 12**, Chang and Abe teach everything as applied in claims 10-11 and Chang also discloses when the main power supply unit is separated from the mobile device due to

external impacts, the power supply load/unload detection unit detects the separation and generates a power cutoff signal to the control unit **(paragraphs 2, 16)**.

As to **claim 15**, Chang and Abe teach everything as applied in claim 10; however, Chang fails to disclose the DC/DC converter converts a voltage of the backup battery into a predetermined voltage for the control unit and the memory device. The Examiner contends this feature was old and well known in the art at the time of invention as taught by Abe.

Abe also teaches the DC/DC converter converts a voltage of the backup battery into a predetermined voltage for the control unit and the memory device **(column 6, lines 56-67)**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the mobile device, taught by Chang and Abe, the DC/DC converter converts a voltage of the backup battery into a predetermined voltage for the control unit and the memory device, to enable the mobile device to handle an instantaneously shut off of the main power supply.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang and Saito as applied in claim 1 in view of well known prior art (MPEP 2144.03).

As to **claim 7**, Chang and Saito teach everything as applied in claim 1 and Chang also discloses power failure may occur when the portable electronic device is hit or as the result of a battery bounce, so the removable battery is momentarily disconnected from the electronic circuitry of the portable electronic device (paragraph 2). However, neither Chang nor Saito fails to teach a battery cavity having a separation button and a battery pack for the mobile device, wherein when the separation button is pulled in a predetermined direction after the battery pack is engaged with the battery cavity, the battery pack is separated from the mobile device and the

power detection unit generates the power cut off signal. The Examiner contends this feature was old and well known in the art at the time of invention as taught by well known prior art.

The Examiner takes Official Notice that it was old and well known in the art at the time of invention for a mobile device to detect when a battery pack is removed from the mobile device.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the mobile device, taught by Chang and Saito, a battery cavity having a separation button and a battery pack for the mobile device, wherein when the separation button is pulled in a predetermined direction after the battery pack is engaged with the battery cavity, the battery pack is separated from the mobile device and the power detection unit generates the power cut off signal, as taught by well known prior art, to enable a mobile device to detect when a battery pack is instantaneously removed.

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang and Abe as applied to claims 10-12 above, and further in view of Saito (U.S. 4,761,824).

As to **claim 13**, Chang and Abe teach everything as applied in claims 10-12 and Chang discloses the control unit receives the power cutoff signal from the power supply load/unload detection unit and generates a backup power supply signal to enable the backup power supply unit to supply power to the mobile device **(paragraph 16)**. However, neither Chang nor Abe teach the control unit converts potential levels of the data lines and the control signal lines associated with the at least one function module. The Examiner contends this feature was old and well known in the art at the time of invention as taught by Saito.

Saito also teaches the control unit converts potential levels of the data lines and the control signal lines associated with the at least one function module **(column 3, lines 25-48)**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the mobile device and control unit, as taught by Chang and Abe, the control unit converts potential levels of the data lines and the control signal lines associated with the at least one function module, as taught by Saito, to enable the mobile device to control its transceiver when an instantaneous drop in voltage.

Allowable Subject Matter

7. Claims 2-5 and 16-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olivia Marsh whose telephone number is 571-272-7912. The examiner can normally be reached on 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on 571-272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CHARLES APPIAH
PRIMARY EXAMINER